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ABSTRACT

A study examined the use of context clues in identifying unknown words embedded in three types of text (fiction, exposition, and science). Subjects were 24 eighth grade students who read three passages at the fifth grade level, each with four content words deleted from them and replaced with pseudowords. Context clues for these pseudowords were systematically varied by type (definition and synonym) and direction (before and after the word). Each student read each passage silently, then responded with the word that fit the place of the nonsense word, citing the specific clue within the passage that helped to determine what the real word should be. As expected, high ability students outperformed low ability students, who took more time to complete the tasks and whose strategies for using context clues were not as highly developed. The fiction and expository texts elicited more correct responses (the target words or their synonyms) than did the science text. Clue identification scores were higher for fiction and expository texts, while word replacement scores were higher for the science passage. Type of clue did not affect scores substantially, though definition clues seemed more effective in eliciting correct responses in the fiction text. Clues placed before the target words were more useful in both the fiction and the expository texts, while the clues placed after the target words were more effective in the science text. (An appendix contains passages read by the students.) (RL)

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The Effects of Context Clue Type and Text Type on the Comprehension of Unknown Words

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The present paper attempts to examine the effectiveness of two different categories of context clues embedded in three different types of text in facilitating word comprehension by readers of different ability levels. The importance of context as a determinant of word meaning has been emphasized by researchers in the field of reading who have stressed the relationship between the use of context and vocabulary development (Dulin, 1969). Several different kinds of studies have explored the nature and use of context clues. A majority of studies have been based on a generalized response to context rather than a specific response to particular

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kinds of context; overall conclusions drawn are that context clues do facilitate the comprehension of word meaning, that there is a high positive correlation between ability and effective usage, and that instruction in clue recognition and usage is significant in effective clue usage (Dulin, 1969; Biemiller, 1970; Weber, 1970; Gipe, 1978; Carroll, Madison, and Drum, 1980).

A second type of study has investigated the effective placement of target words within sentence context for maximum clue value. Aborn and Rubenstein (1957) discovered that context is generally most effective when the unknown target word is placed in the center of a sentence, there being a greater likelihood of a correct response than a total preceding or following context. Madison, Carroll, and Drum (1981) studied, instead,the placement of clues relative to the target word, looking specifically at directionality (clue before and after the target word) and proximity (relative closeness to the target word). They concluded that direction influenced clue usage, being more effective in the after position for high ability students and in the before position for low ability students, and that close proximity to the target word made the clue more effective for both ability groups.

A third type of study has explored the area of classifying clue types. Ames (1966) found 14 unique categories of clues by post hoc analysis of student responses. His graduate student subjects read fiction stories and non-fiction articles with pseudowords substituted for every 50th word, each containing the same number of letters as the original word and composed of syllable combinations that approximated a true English word. The subjects read each passage and then responded in personal

interviews as to what the real English word should be and their reasons for it. Ames, however, did not make an attempt to analyze the effectiveness of clue type nor the effectiveness of text type in which the clues were embedded.

Quealy (1969) replicated Ames' study with senior high school students and concluded that his subjects used the same clues, although with less accuracy. Rankin and Overholser (1969) also replicated Ames' study with upper elementary students but used a cloze technique rather than substituting nonsense words and an objective context test to measure clue sensitivity. They conducted a more complete analysis of subjects' use of clues and found a difference in the frequency in which clue types were used. In none of the context clue studies do the authors consider the overall effect of passage type in which clues are embedded.

This study was designed to examine the effective use of the two most frequently mentioned types of context clues, definition and synonym (as determined by Rankin and Overholser), embedded in three different types of text, fiction, exposition, and science, in determining the meanings of unknown words by 8th grade students. Also, the directionality variable, clue before or after the target word, was reexamined for ability effects. It was predicted that type of text would influence clue usage. Since science passages are generally more complex and detail-oriented, the difficulty of the text would interfere with the use of clues, so that fiction, exposition, and science would rank from more to less effective. It was also predicted that clue type would influence the use of clues, with definition being more influential than synonym, based on Rankin and Overholser's findings. It was expected that higher ability

subjects would make more effective use of clues than lower ability subjects, but that there would be an interaction between ability and directionality of clue, as reported in Madison et al.

Method

Subjects

Subjects participating in this study were 24 8th grade students from a junior high school of lower-middle to middle SES. They were divided into four groups by ability and sex (i.e., group 1 - high ability females, group 2 - high ability males, group 3 - low ability females, and group 4 - low ability males.) Level of ability was determined by teacher evaluation and corroborated by standardized test score results (California Test of Basic Skills.)

Materials

Materials consisted of three passages (Appendix A), each approximately 200 words in length, and varied as to topic, author style, and text type. Passage 1 was fictional, a boy-meets-girl story; passage 2 was expository, a biography of a famous baseball player; and passage 3 was scientific, a description of the planet Earth. Four content words were deleted from each passage, and a pseudoword composed of syllable combinations that would approximate a true English word was substituted. Context clues for these pseudowords were systematically varied by type and direction. Two types of clues, definition and synonym, were evenly divided over the target words, with half the clues coming before the word and half after the word. Proximity was controlled, with all clues within five words of the target pseudoword. All three passages were taken from 5th grade

level curriculum materials. Passages were balanced across trials to control for position bias. Two scorers reviewed and agreed on the appropriateness of clue type and text type.

Procedure

Following Ames' and Quealy's studies, an introspective approach was used to collect data; each student was interviewed separately, with no time limit imposed, and their answers were tape-recorded. After being instructed that they would read three passages with four nonsense words substituted in each and asked to supply a true English word for each pseudoword and the reason for the replacement, each student read each passage silently and then responded as to 1) what English word would fit the place of the nonsense word, and 2) what specific clue within the passage helped to determine what the real word should be. They were given the opportunity of making any notes they wished on the written passages to aid in their answering.

In evaluating the word replacement responses, the exact word or acceptable dictionary synonym with correct tense and grammatical structure was required. In evaluating the clue identification responses, the specific clue embedded in the passage was required. The scoring procedure was a 0 for a wrong answer and a 1 for a right answer for both word replacement and clue identification.

Results and Discussion

The research design included one between subject variable, ability (2 levels), by prose type (fiction, exposition, and science), with directionality (2 types) and clue type (2 types) crossed with passages. There were two dependent measures, word replacement and clue identification.

This section will be examined first for ability, followed by text type, clue type, and directionality.

Ability

As expected, high ability students outperformed low ability students, F (1, 20) = 28.1, $p < .00$. Differences between ability groups was demonstrated during the interviews in several ways. Time required for completion of the task varied between groups, with the average time per interview for high ability students being 12 minutes and 20 minutes for low ability students. Strategies used in responding also differed. Low ability students at times used the pseudoword itself as a clue to the real word, choosing a look-alike rather than a word to fit the context; for instance, the fomme pseudoword provided the word form rather than the expected layer or a synonym. There was also a tendency for low ability students to use as clues the words immediately around the target word without regard to the context of the passage; for example, "Even though Lou was a heag player..." brought responses such as basketball when the correct word was poor. Contrary to Madison et al., there was no interaction between ability and clue direction, as the before position clues were more effective for all subjects. Correlation between clue identification and word replacement scores was .77, showing that if the readers did well on one, they also did well on the other.

Text Type

Type of text was highly influential, F (2, 40) = 4.2, $p < .02$, with fiction and exposition passages receiving more correct responses than science. An interaction between text type and dependent measures, F (2, 40) = 4.03, $p < .03$, showed that for the fiction and exposition

passages, the clue identification scores were higher, while the word replacement scores were higher for the science passage. (See Table 1). This may be due to the precision of concepts in science, requiring an exact answer, while many concepts may fit fiction and exposition, requiring less precise definitions.

Clue Type

Clue type did not substantially differ overall. The fact that clue type did not make a difference may be due to the relative similarity of definition and synonym type clues. More control in selecting contrasting clue types might produce different results. A further consideration is the difficulty in completely controlling passage clues; while attempting to embed specific clues, the context of the passage itself provides clues. There was an interaction between passages and clue types, F (2, 40) - 5.67, $p < .01$, showing that for the fiction passage, the definition clue was more effective for a correct response, while in the exposition and science passages, the synonym clue was more effective. (See Table 1). This may be due to the nature of each type of prose; fiction is generally more descriptive, lending itself to fuller, definitional clue types, while exposition and science being generally more terse, lend themselves to a synonym type clue.

Clue Direction

Direction of clue relative to the target word made a difference overall, F (1, 20) = 5.33, $p < .03$, with clues in the before position being more effective, as previously mentioned. An interaction between

text type and clue direction, F (2, 40) = 8.79, $p < .00$, showed that the before clue was more effective for both the fiction and exposition passages, while the after clue position was more effective for the science passage. (See Table 1). A reason for this may be that the position of the clue lends itself to reader prediction of the content. Both the fiction and exposition passages were less detail-oriented than the science passage and likely made fewer demands on the readers' attention; the reader could anticipate the upcoming text. The science passage, on the other hand, is more precise in its wording, expecting a definite answer. Until the reader comes to the nonsense word, attention is focused on the details of the text; at the pseudoword, the reader may then begin to look for the text to explain it.

Educational Implications

Empirical evidence has demonstrated the effectiveness of context in facilitating word comprehension; the ability to use context well, in fact, underlies mature reading. While students are encouraged to use the context of a reading selection, their efforts in being successful may vary according to their mastery of the skill; instructional implications would be, then, for the direct teaching of clue recognition and employment, together with appropriate practice. In instruction, ability level of the student should be considered, as this study has demonstrated the less effective use of clues by low ability students even with appropriate level reading materials. Developing meaning through using contextual aids has been described as a problem-solving task, which is correlated highly with high ability students; low ability students, then, require more instruction and practice. Type of text

should also be considered with attention as to reading difficulty and text purposes, e.g., fiction for casual reading as compared to technical for specific details; knowing what, where, and when to look for clues is based on the particular selection being read. While the use of context will not necessarily provide specific and multiple meanings of a word, the student should recognize that context surrounding any textual segment can help in determining the meaning of that segment.

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Table 1.

Averages for Text Type by Dependent Measures,

Clue Types, and Clue Direction

	Fiction		Exposition		Science	
	M*	SD	M*	SD	M*	SD
Dependent Measures						
Word	2.92	0.82	3.13	1.41	2.00	0.89
Clue	3.08	0.82	3.29	1.63	2.63	0.98
Clue Type						
Synonym	2.58	1.33	3.38	1.33	2.96	1.17
Definition	3.42	1.03	3.04	1.83	2.54	1.52
Clue Direction						
Before	3.46	1.03	3.54	1.97	2.42	1.33
After	2.54	1.26	2.88	1.60	3.10	0.98

*out of a possible 4

Appendix A

Fiction, Exposition, Science Protocols

Fiction

Even a guy with a broken heart must eat. Sixteen hours after he had given up food, women, and other interests, David went down to the corner whicomm. Surrounded by toothpaste, greeting cards, tobacco, and the like, he ate a strawberry sundae, a double chocolate cone, and a package of cookies.

Suddenly, he saw the girl. She was sharp sitting down and sharp when she got up and even sharper when she walked. He got his herat and paid the tab without looking. Hurrying, he caught up with her and said, "Hi!" She didn't even look at him. In spite of the brush-off, his ear tickled. His ear always tickled when he fell in love.

The next day, he ordered $50 worth of flowers from a thacells. The salesgirl smiled at him in admiration, and he felt wonderful. Laying his money on the counter, he looked at her. Why, she was beautiful-small, dark, and dreamy. He forgot why he was there and the first girl. Smiling back, David absently scratched his ear. It was beginning to seggel.

Exposition

In 1936, 1937, and 1938, the New York Yankees, with Lou Gehrig as captain, won the World Series three times in a row. In 1936, none years after he first received the most valuable player award, this stuve was given to him again.

Sick or well, he never missed a game. Lou played in spite of colds, in spite of fevers. He played when he was so doubled over with a backache

that he couldn't straighten up, and still he hit a single! One year he broke a toe and played on. Once when his hands were X-rayed, the doctors found 17 broken bones that had sourid by themselves, mending without any medical aid. He had broken every finger on both hands - and some twice- and hadn't even told anyone. The strange thing about all this is not that Lou was able to stand the pain of breaks, sprains, and other myspelds, but that he still was a first-rate player. If he had something the matter with him, he tried all the harder.

A writer once said that there was no greater inspiration to any American boy than Lou Gehrig. Even though Lou was at first a heag player, being awkward and clumsey, he turned himself into the finest first baseman in all baseball.

Science

The earth is the third planet from the sun. It revolves around the sun once a year at a speed of 18½ miles per second. It rotates on its axis four minutes less than the normal 24 hour clock. The earth is not a perfect groold as it is 7,926.68 miles around the equator but only 7,899.98 miles around the poles. The weight of the earth is written as the number 66 followed by 20 zeroes tons, about 5½ times heavier than an equal size of water.

It is not composed of the same materials at the surface as it is in the center. From the luur of the earth to the surface is about 3,950 miles. The first 2,200 miles is rock that is like liquid. Next is a 1,700 mile layer of very heavy rock that grows lighter towards the surface. Finally comes the outer rocky crust, about 25 miles thick, a much smaller fomme.

On the surface, the thinnest layer of rock has been changed into soil by air and water.

Mars, the fourth planet away from the sun, revolves around the sun in 687 days. It doesn't move in a perfect enopur, but its orbit varies from 35 million miles to 234 million miles away from the Earth.